



# PETS Maintenance Database

(Project Equipment Tracking System)

## Functional Specification

Prepared by: Dick Edwards - Ilex Computing Ltd.

18th Feb 2013

# Executive Summary

## Objective

The PETS system is designed to coordinate operational maintenance tasks and certification for offshore projects, the system is particularly suited to diving operations. The system is PC based and written in Delphi 2007 using an SQL server database engine, this provides focused data input forms utilizing a stable & powerful standardized database system. The system is designed to provide ease of use and maximum flexibility to the user with many search and reporting tools built in. A separate remote package provides a mini system specifically for that project enabling easy access to certification and maintenance records on the job site.

One of the objectives of the package is to enable much faster collation of certification and maintenance documents at the start of a project. This is achieved by ensuring ALL documentation is available in PDF format, this being certification, maintenance check sheets, inspection matrices or operation manuals. A typical paper based system involves photo-copying hundreds of paper documents at the start of a project and compiling them into large binders for reference. With PETS a CD is created containing electronic versions of all the certificates and maintenance documents, a cut-down remote version of the database, containing only the specific project, can be searched and reports printed on site, providing fast access to mission critical data.

## PETS Overview

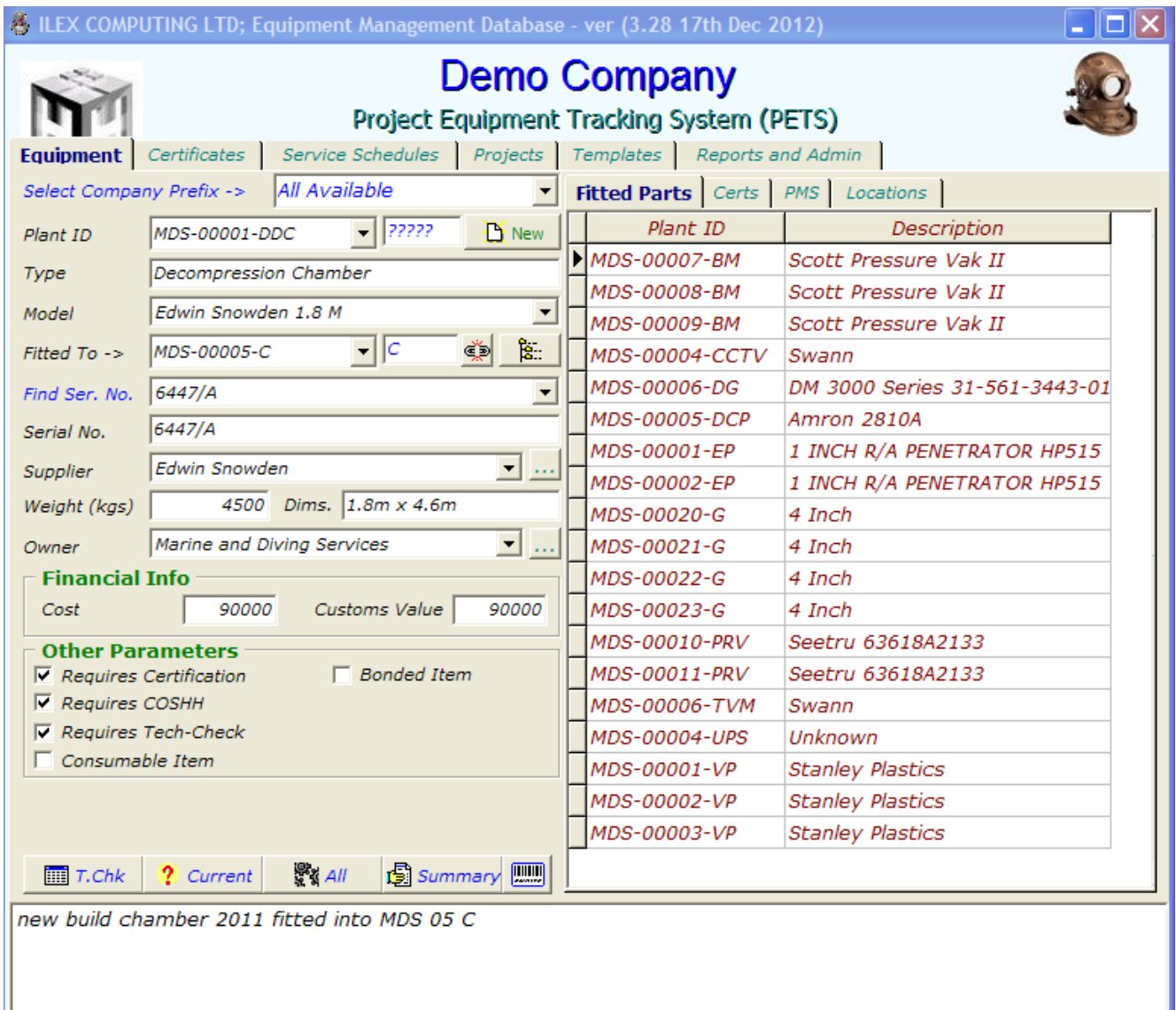
Each user has a unique log in and the administrator can assign different permission levels to each user, this may be read-only through to full editing rights. The login screen is shown here, this remains constant whether logging in on a local system or remotely through remote desktop or Terminal Server.



Once the login has been completed successfully there are several tabbed pages, summarized on the next few pages, which provide the data entry forms for certification, maintenance, reporting and project equipment summaries.

## Parts Data form...

The screen above is used to enter individual asset information whether the item is an individual item or attached to a parent



ILEX COMPUTING LTD; Equipment Management Database - ver (3.28 17th Dec 2012)

### Demo Company

#### Project Equipment Tracking System (PETS)

Equipment | Certificates | Service Schedules | Projects | Templates | Reports and Admin

Select Company Prefix -> All Available

**Fitted Parts** | Certs | PMS | Locations

Plant ID	Description
MDS-0007-BM	Scott Pressure Vak II
MDS-0008-BM	Scott Pressure Vak II
MDS-0009-BM	Scott Pressure Vak II
MDS-0004-CCTV	Swann
MDS-0006-DG	DM 3000 Series 31-561-3443-01
MDS-0005-DCP	Amron 2810A
MDS-0001-EP	1 INCH R/A PENETRATOR HP515
MDS-0002-EP	1 INCH R/A PENETRATOR HP515
MDS-00020-G	4 Inch
MDS-00021-G	4 Inch
MDS-00022-G	4 Inch
MDS-00023-G	4 Inch
MDS-00010-PRV	Seetru 63618A2133
MDS-00011-PRV	Seetru 63618A2133
MDS-00006-TVM	Swann
MDS-00004-UPS	Unknown
MDS-00001-VP	Stanley Plastics
MDS-00002-VP	Stanley Plastics
MDS-00003-VP	Stanley Plastics

new build chamber 2011 fitted into MDS 05 C

item, this is the fundamental information such as serial number, manufacturer, description, weight etc. A check box section is provided to flag whether the item requires certification (i.e. consumables such as electrical tape may not require certification), also boxes for COSHH Consumable, Bonded and whether a tech-check sheet is required and PAT testing is also an option.

The list shown on the right shows parts that are attached to the main item (i.e. children), by clicking on any of these it will be displayed in the main window on the left and any parts attached to it, will then be displayed on the right side.

The user can click on an attached item to view the status of that item, then revert back to the parent. The user can also view the selected items current; certificates, attach new certificates or perform maintenance on the item and reset the service interval.

On the PMS tab the user can view the full history of services carried out through the life of an item, including any attached documents which may describe the service.

Also on the right tabbed page you can review the history to see which projects the item has been on and where it is now.

A certification matrix document can be accessed under the 'Certs' tab, this provides a cross-reference to certification periods and types of certification. When selected a list of items relevant certs are provided, double clicking these pulls up the selected certificate in Acrobat.

Fitted Parts   <b>Certs</b>   PMS   Locations				
Add New Certificate		Remove Selected		
Matrix ... CHAMBER SPOOLPIECES & CLAMPS.pdf				
Cert.	Curr.	Expiry Date	Last Cert.	Description
39979	True	24/09/2038	09/05/2011	MDS 01 DDC NDT Operator Certificate
39978	True	12/06/2038	25/01/2011	MDS 01 DDC Operating Instructions
39977	True	04/06/2038	17/01/2011	MDS 01 DDC Hazard Analysis
39976	True	04/06/2038	17/01/2011	MDS 01 DDC Safety Requirements
39975	True	17/08/2038	01/04/2011	MDS 01 DDC Copy Nameplate
39974	True	05/09/2038	20/04/2011	MDS 01 DDC Compliance Certificate
39973	True	28/09/2038	13/05/2011	MDS 01 DDC Conformity Certificate
39972	True	18/04/2016	20/04/2011	MDS 01 DDC Hydro Test (apr11)
39971	True	08/03/2038	21/10/2010	MDS 01 DDC Material Appraisals

New certification can be assigned to an item here, and old certs can be detached.

A certification matrix can be associated with any item, in the example above a Chamber is selected and the Certification matrix is provided in the document 'CHAMBER SPOOLPIECES & CLAMPS.pdf', by clicking the button the matrix can be viewed/printed.

Fitted Parts   Certs   <b>PMS</b>   Locations				
<b>Service Regimes ...</b>				
Service Description	Last Date	Last Hrs	Due Date	Due Hrs
2 yearly PLT PANEL & PIPEWORK	08/08/2011	0	01/08/2013	0
30 monthly Pressure Leak Test	08/08/2011	0	30/01/2014	0
6 Monthly PMS	No Service data			
<b>History ...</b> Double Click on Line to View Document <span>Carry out a Service</span>				
Last Hrs	Last Date	Service Description	File Name	
0	08/08/2011	30 monthly Pressure Leak Test	Decompression Chamber MDS 01 DDC 30	
0	08/08/2011	2 yearly Pressure Leak Test	MDS 01 DDC 2 Yearly PLT.pdf	
<b>Notes on Service ...</b> <span>Add Report File ...</span> <span>Delete Selected Service</span>				

The PMS tab shown above, provides a list of all the service documents that are relevant to the asset being displayed. This may include service manuals, regular servicing or any other service material related to the asset.

The lower list on the right provides a list of services that have been carried out on the particular asset and a supporting PDF document can be attached to a service along with any brief notes relating to the service.

The lower list on the right provides a list of services that have been carried out on the particular asset and a supporting PDF document can be attached to a service along with any brief notes relating to the service.

Finally on the Locations tab there is a list of the projects that the item has been on with start and end dates.

Fitted Parts   Certs   PMS   <b>Locations</b>				
	Project	Out Date	In Date	Days
▶	25206	16/02/2011		
	25206	24/04/2009	16/02/2011	6.6E2
	25206	02/01/2007	23/01/2008	3.9E2

## Certificate Data Entry and Search Facility...

Equipment | **Certificates** | Service Schedules | Projects | Templates | Reports and Admin

Search for Certificate No ->

Is Certificate Current

Cert.	Current	Class	Expiry Date	Last Certified	Description	File Name
40244	True	CERT	29/09/2012	30/09/2011	MDS 15 - 16 WW Destruction test ce	WW MDS 15-16 WW DESTR Test (Sept11).pdf
40243	True	CERT	29/09/2012	30/09/2011	MDS 13 - 14 WW Destruction test ce	WW MDS 13-14 WW DESTR Test (Sept11).pdf
40242	True	CERT	01/09/2012	02/09/2011	MDS 01 UPRS Cert of Calibration (Sep	MDS 01 UPRS Calibration (Sept11).pdf
40241	True	PLT	18/05/2013	19/05/2011	MDS 04 C - 2 Yearly PLT (May11)	MDS 04 C - 2 Yearly PLT (May11).pdf
40240	True	PLT	13/07/2013	14/07/2011	MDS 01 SRS - 2 Yearly PLT (Jul11)	MDS 01 SRS - 2 Yearly PLT (Jul11).pdf
40239	True	PLT	08/11/2013	09/11/2011	MDS 06 C - 2 Yearly PLT (Nov11)	MDS 06 C - 2 yearly Pressure leak test (Nov11).pdf
▶ 40238	True	Hydro	06/09/2012	07/09/2011	MDS 1-4 DL Hydro Cert (Nov11)	MDS 1-4 DL Hydro Test (Sept11).pdf
40237	True	Cal	26/09/2011			ation (Sept11).pdf
40236	True	Cal	29/09/2011			ation (sept11).pdf
40235	True	Cal	22/05/2011			tion (Nov11).pdf
40234	True	Cal	22/05/2011			tion (Nov11).pdf
40233	True	VI	25/07/2011			o Test ((July11).pdf
40232	True	VI	25/07/2011			o Test (July11).pdf
40231	True	VI	15/05/2011			ual Inspection (Nov11).pdf
40230	True	VI	15/05/2011			ual Inspection (Nov11).pdf
40229	True	VI	15/05/2011			ual Inspection (Nov11).pdf
40228	True	VI	15/05/2012	15/11/2011	MDS 102 SHK Visual Inspection	MDS 102 SHK Visual Inspection (Nov11).pdf
40227	True	VI	15/05/2012	15/11/2011	MDS 67 SHK Visual Inspection	MDS 67 SHK Visual Inspection (Nov11).pdf

**Enter New Certificate Details**

Cert No.   Class/Type

Last Cert   Expires

Description

FileName

The certificate form allows the addition of new certificates to the system and attaches them to a particular item. This is linked so that reports on the current status of the system can be generated. When the details for the cert are entered, a certification date is entered plus a duration, this automatically generates an expiry date.

A PDF document provides an electronic version of the certificate and is attached to the certificate number.

In the reporting section this is used to generate a report, for instance, all certs expiring in the next 30 days on a particular project can be generated. By regularly running reports it is possible to ensure that all certification and maintenance is current.

## Service Schedules and Manuals...

Equipment | Certificates | **Service Schedules** | Projects | Templates | Reports and Admin

Select Part:

Select Model:

Edit Description:

Intervals:  hrs  months  weeks

Service Docs:

Service Description	Hrs	Weeks	Months	Category	Description	File Name
Maintenance Manual	0		0	Air Lift Bag	JW Automarine	TV Monitor - JVC LM-15G Manual.pdf
Daily/General PMS	24		0	Air Lift Bag	JW Automarine	Air Lift Bag _ALB_ Maintenance Schedule Daily-
6 Monthly PMS	0		6	Air Lift Bag	JW Automarine	Air Lift Bag _ALB_ Maintenance Schedule 6 Mo
12 Monthly PMS	0		12	Air Lift Bag	JW Automarine	Air Lift Bag _ALB_ Maintenance Schedule 12 Mon

Service schedules can be entered for all the equipment, these are categorized by model and description so that on the parts page when an item is selected, the relevant manuals and service schedules are made available.

When an item has a matching description and model, all service documents are made available to the user, they are also copied to the CD when created. This ensures that there is minimal user input in compiling the certification for a particular project, where new equipment is added to a project currently on-site, a CD can be burnt and sent with the equipment.

## Project Configuration and Manifesting...

Equipment | Certificates | Service Schedules | **Projects** | Templates | Reports and Admin

Select Job No.:

Select Dispatch Note:

Finalised | Call Out

Click on Title Bar of Grid below to Sort

Plant ID	Fitted To	Qty.	Stat.	DNo	OutDate	InDate	Template
MDS-00007-C		1	1	298	01/12/2011		Manually Added
MDS-00002-DL		1	1	298	21/11/2011		Manually Added
MDS-00003-DL		1	1	298	21/11/2011		Manually Added
MDS-00004-DL		1	1	298	21/11/2011		Manually Added
MDS-00025-G		1	1	298	21/11/2011		Manually Added
MDS-00026-G		1	1	298	21/11/2011		Manually Added
MDS-00017-HOR		1	1	298	21/11/2011		Manually Added
MDS-00018-HOR		1	1	298	21/11/2011		Manually Added
MDS-00005-HDR		1	1	298	21/11/2011		Manually Added
MDS-00039-PRV		1	1	298	21/11/2011		Manually Added
MDS-00040-PRV		1	1	298	21/11/2011		Manually Added
MDS-00001-SRS		1	2	298	21/11/2011	21/11/2011	Manually Added
MDS-00001-SRS		1	2	298	21/11/2011	21/11/2011	Manually Added
MDS-00001-SRS		1	1	298	21/11/2011		Manually Added
MDS-00001-UPRS		1	1	298	21/11/2011		Manually Added
MDS-00002-UR		1	1	298	21/11/2011		Manually Added
MDS-00013-WW		1	1	298	21/11/2011		Manually Added
MDS-00014-WW		1	1	298	21/11/2011		Manually Added
MDS-00015-WW		1	1	298	21/11/2011		Manually Added
MDS-00016-WW		1	1	298	21/11/2011		Manually Added
MDS-00011-WTE		1	1	298	21/11/2011		Manually Added

41122 - Druck PV411A Hand Pump, Workshop Test Equiper

Show All Items | Remove Selected Items | Reconcile against Call\_Out List

Book All Goods Out | Book Item In

Reports: Select Report:

**Project Details** | Plant Items | Consumables

Client:

Destination:

Ship To:

Shipping Date:

Duration (Est):  days

Notes (Linked to Dispatch Note No.)...

Items sent in 1mtr x 1mtr Sq wooden crate 23.11.11

- 2 x 4" 0 to 400 PSI F/Flanged panel mount gauges O2 service MDS25/26G
- 2x Battery for above
- 3 x Diver monitoring transducers
- 2 x Hyperbaric fire extinguisher refills
- 2 x 18 Kg drums ROCOL wire shield rope lubricant ( Winch wires )
- 10 x 32mm Stauff clamps complete with bases
- 3 x Sets overboard floodlights & bulbs inc junction boxes
- 1 x Grease gun & 4 x Grease tubes
- 4 x Stephan Wells 211 service Kits for dome loaded regulators
- 3 x Soft seal kits for Scott Aqua vac II bibs masks ( Diaphragms for Bibs )
- 3 x Flint Striker/Igniters
- 2 x Safety interlock over travel limit switches
- 1 x Lot NCT packing glands
- 20 mtrs of 25mm 657 grade green/yellow cable
- 40 x 25-12 cable lugs
- MCIL-2F X 2 connector
- MC-DLS-FR X 2 connector
- IL-6-FS X 2 connector
- DLSB-FR X 2 connector
- IL-6-MP X 2 connector
- DLSB-MR X 2 connector
- MCIL-2F X 2 connector
- MC-DLS-FR X 2 connector
- L-4F X 2 connector
- WH4MSS X 2 connector





When adding equipment to a project the form above allows equipment to be selected on the right side from available equipment on the site and moved to the project. All certification is linked by a unique asset number along with all documentation, such as service schedules/manuals are linked by the model and description, all documentation is automatically linked to the asset which has been added to the project.

Not only this but all equipment is treated in a hierarchical fashion such that when a parent item is assigned to a project, all the children, and their children are also assigned to the project. e.g. if a container is a parent, it may have children such as decompression chamber, which may have children such as gauges and valves, certs and service docs for ALL the items are assigned to the project ensuring complete documentation.

## Reporting...

The screenshot shows a web-based reporting interface with two main sections: "Project Based Reports ..." and "Status & Summary Reports ...".

**Project Based Reports ...**

- Select Project:
- Select Dispatch Note:   ALL
- Project Pick-list by Zone
- Project Goods OUT Manifest
- Project Goods OUT Shortfall
- Project Goods IN Shortfall
- HTML Project CDROM
- Certs/PMS Expiring in:  Days
- PMS Required in next:  Hours
- Plant Test & PMS Status
  - by Expiry Date
  - incl. during Project
- Cross Check Parts v Project

Label Height (mm)

**Status & Summary Reports ...**

- Plant Location Summary
  -
- Available Equipment
- Project Based Plant Listing Summary

**Selection Criteria**

- Equipment Prefix:
- Type:
- Location:
- Status:
- Sort by:

Buttons:

The reporting page allows various searches to be created according to location, type, etc. in addition to the standard manifests, shortfall and warning check list reports.

By printing a project summary, the user will easily ascertain any items in need of certification or maintenance.

The reporting section is also used to create a CD containing ALL relevant documentation, an HTML version of each manifest and each dispatch note, also a mini version of PETS with only the information for the selected project.

**Using this system it is possible to put together an equipment manifest and all the relevant documentation in a matter of minutes as opposed to manual systems which traditionally took several days. It also provides fast access to any component and allows sight of the status for the item.**

## PETS Remote...

Once a project is compiled on the network system in the office, a CD version of the project equipment, manifest, certs etc. can be produced. This is a cut down version of the main database and contains ONLY the data, certs, manuals etc. that relate to the dispatch note/project on the CD.

A front end - shown here - allows the offshore users to view certificates, maintenance documents etc. and print their own reports, this is run from a self contained access file. The CD also contains an HTML version of the project which can be viewed in a browser.



Proj : OTM 20

Plant ID: R7M-00002-C

Category: Container

Description: 10 x 8 Divers Hot Water Machine Container

Fitted To -> [ ]

Find Ser. No. 536

Serial No. 536

Supplier: C.A.P Fabrication

Weight (kgs) 0 Dims. 10ft x 8ft

Owner: Red 7 Marine

**Other Parameters**

Requires Certification

Requires COSHH

Requires Tech-Check

Consumable Item

Bonded Item

Tech.Check Status ALL Summary

EN12079

SWL: 7000 T

TARE: 2000 T

GROSS: 9000 T

Date of Manufacture: March 09

Plant ID	Description
R7M-00001-BT	McCallum Water Heating
R7M-00001-DHWM	Powrmatic PM1R9
R7M-00002-DHWM	Powrmatic PM1R9
R7M-00001-FE	Carbon Dioxide
R7M-00001-HEX	Thermex 810745
R7M-00004-TRN	Boardman Type CL6000 Variatin

Certs/PMS Expiring in 14 Days

PMS Required in next 17 Hours

Print Service Requirements

For further information contact Dick Edwards at Ilex Computing Ltd. +44 (0) 845 0945 442 or [r.edwards@ilexuk.com](mailto:r.edwards@ilexuk.com)